6: Joseph E-5 (1965-1966) 1975, MX3 Rif MX3

Chapter 2

LIVELIHOOD

243 The primary economic activity in the Central Rif is the cultivation of barley. The agricultural cycle is marked by the [221] planting and harvesting of this crop. Ploughing begins during the months between October and January depending on the occurrence of the first rain which is necessary to soften the soil. [407] Breaking the soil is done by wooden ploughs though the blades are made of metal. The terrain is first weeded and cleared of small rocks by the children of the family. Then the father, an 243 492 older son or a hired man commences the ploughing. Two animals, one on each side of the plough, are used. Mules are preferred, but rarely does a man have two. Thus, there is a bizarre mixture of animals including combinations of donkeys, cows and mules. The value of animals on the market is at its highest in this season since everyone needs them for ploughing.

243 After the land has been ploughed by the animals it is [412] broken even finer by the use of a hand hoe. When the land has been sufficiently prepared, the seed is sown by hand. Once the barley has been planted there is no further care of the fields. The crop is dry farmed and its yield depends entirely on the amount of rainfall it receives during the winter.

243 While barley is the predominant crop, maize is an important secondary one. Wheat and rye are also grown but the latter is held in low esteem as a food product[1] and the former does not grow successfully on the thin residual soil of the region. In 241 [312] those areas where there are rivers or streams, small gardens are maintained by irrigation canals. In these are cultivated potatoes, tomatoes, onions, garlic, squash, turnips, green peppers and mint.

245 In addition to the grains, maize, and small vegetable gardens, many households also have orchards of fruit and nut trees. Fig, lemon, orange, pomegranate, walnut, almond, and olive trees are common. In some areas grapes are also cultivated. Around each house is a grove of prickly pears which serves not only as a means of preserving privacy, but also as a source of food. These products not only supplement and add variety to the regular diet but in the case of oranges, almonds [258] and grapes serve as cash crops. The olives are pressed by the [262] women to provide crude cooking oil. Nuts, dried grapes and figs are an important winter food reserve. The work of pruning and [221] grafting goes on during the months of February-March-April.

243 In early summer harvesting begins. Both men and women engage in this activity, the men doing the reaping with hand

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[829] [1]Coon (1931:47-48) states that rye is highly praised by the Riffian but that since the Arabs scorn it as a foodstuff the Berbers are ashamed to admit its worth.

243 sickles and the women carrying the grain stalks to the threshing areas. The threshing floors are generally merely a circle of dirt ground, although in some areas they are paved. The stalks [231] are placed on this circular floor and mules, donkeys, or cattle are driven about inside the circle, trampling the grain and separating it from the chaff. The grain is further refined by hand-winnowing done by the women. The straw is accumulated in circu- [231] lar stacks to be preserved as food for the animals during the winter months. When relatives have worked a common piece of land 243 465 the yield is divided by measuring off the appropriate amount of grain in straw baskets. If the division is on a one-for-one basis, each alternate basket will go to one of the parties. If the division is at some other ratio, the number of baskets will accordingly be at that ratio. If the land was ploughed, planted [427] and harvested by a akharmas, a sharecropping laborer, the owner of the land will receive four bushels out of every five, the remaining fifth going to the akharmas.

241 Throughout the summer the vegetables, fruits and nuts are harvested as they come ripe. In late summer and early autumn the [465] maize and grapes are harvested. Once again, if the labor of several families or of akharmas has been involved, straw baskets are used to allot out to each man his appropriate portion. It is 585 during this period, in the months of August and September, that 221 [241] weddings are held. The agricultural cycle has been completed and there is spare time to arrange the necessary items for a wedding. Also this is the period in which the optimum amount of food is

585 available and the weather is most propitious for holding the
221 giant outside wedding ceremonies common in the Central Rif.

221 After the wedding season, the cycle resumes and with the
241 first autumn rains the land is ploughed anew for the next crop.
[461] This process begins for most men when they are but 12 or 13, and
continues with monotonous regularity until they die or become too
[777] enfeebled to do the work. Perhaps it is this unending sameness
which contributes to some of the fatalistic beliefs held by the
tribesmen.

231 Although the Berber of the Central Rif mountains is primarily an agriculturalist, he also maintains a stock of assorted animals. Most families have a herd of goats, a few sheep, and some chickens. If the household has some wealth they will also
[262] have a cow and either a mule or donkey. Although livestock is not the primary food source, it is a very important secondary supply, providing milk, butter, eggs, and meat. Livestock is
[556] also an important source of material and social wealth and of
[554] prestige. Animals serve as reserve capital on the hoof which
[471] can be converted into hard cash at the weekly market. Perhaps
231 most important is the ritual value of animals. While grain is
796 vital for subsistence there is very little social significance attached to it. On the other hand, while animals are secondary to subsistence they are the essence of the ceremonial and ritual life of the Riffian. There are practically no communal events,

585 that the groom's side has complied with the original agreement.
[583] Once he has satisfied himself that all is in order, he signs
[692] the necessary marriage document. At this point the couple are
[184] legally married and many poor urban matches terminate here. In
[369] the Rif, however, the marriage is not socially sanctioned until the wedding ceremony is held.

585 By now, the groom's family has incurred several different
583 types of expense, although none of them is exactly 'bride-price'
431 or a payment to the bride's family to compensate for her loss. The first sort of payment is the gift, or zattat, given to the father to put him in a receptive mood. This places the recipient in obligation to the giver, although the Riffians seem to attach no binding commitment arising from this and a father can receive such gifts from an unlimited number of suitors. The second expense is the sdaq, which is in cash and devoted, at least in the Central Rif, exclusively for the purchase of objects to set up the new household. The final type of expense involves ceremonial costs for the wedding party.

585 The wedding celebration or thamagra is held in the late
[221] summer and early autumn after the harvesting of the cereals and while the weather is temperate. For several days prior to the
585 ceremony both the bride and groom, separately but with a group
574 of their friends, go from house to house within their dchar. Often the two parties go on a circuit of the same houses at the same time, although this is not always followed. When they do go to the same houses, the girl's party precedes the male group

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Senhaja MX4

presence of an influential family of *shurfa*, alleged descendants of the Prophet, who encouraged a shift from Berber to Arabic speech. Rifian is spoken in the hamlet of the Aith Azza, but the weekly market of Targist has functioned traditionally as a trading center for the Sanhajan tribes, especially Zarqat. The Aith Mazduwi also appear to be of mixed origin, for both the Sanhajan and Rifian dialects are spoken by this tribe.

Sanhajans and Ghmarans generally regard all tribes to the east of them as Rifian, but among the Aith Bu Yihyi and other tribes of the Kert and Moulouya valleys this appellation is restricted to the tribes of the basin of Wad Nkour. It is useful to think of a zone of transition between the "true Rif"—Aith Wariyaghar, Ibuqquyen, Aith Ammarth, Igzinnayen, Aith Tuzin, Thimsaman—and the eastern frontier of the northern zone. The Ulad Stut are intrusive bedawin, like the Khlut of the Atlantic littoral. The remaining tribes may be described as "eastern Rifians." Two minor confederations are recognized within this group. The first, "Iqar'ayen" in Rifian and "Gal'aya" in Arabic, includes five tribes: Aith Bu Ifrur, Aith Sidar, Imazujen, Aith Bu Gafar, and Aith Shikar. The second, called "Garet" or "Gart" in Arabic, is formed of Ibdharsen and Aith Bu Yihyi. The dialect of the Aith Iznasen is intelligible to most Rifians, but there seems to be general agreement that the Rif, even in a broad sense, does not extend beyond Wad Moulouya.

Land and Livelihood

In the total context of geography, northern Morocco should be described as an isolated and generally inhospitable area. Moving from the Atlantic coast toward the east, the traveler is confronted with an abrupt transition from alluvial plains and terraces to a wild and chaotic zone of steep slopes and narrow ridges. The eastern lowlands are more favorable from a physiographic point of view, but the Rif chain creates a rain shadow, and the tribesmen of the eastern Rif, Garet, and Gal'aya suffer from meager and erratic rainfall. Cut off to the south by the Rif chain and to the north by inhospitable coasts, northern Morocco cannot compare with Greece, Italy, southern France, or Andalusia as a breeding place for advanced civilization. It is a rampart and a place of refuge.

The tribesmen of northern Morocco share an agricultural heritage derived in part from contacts with Phoenicians, Romans, Arabs, and Europeans. Farming methods are primitive, for the mountain tribes learned centuries ago how to grow the maximum amount of food on tiny terraces, and the size of their fields and the steepness of slopes discourage mechanization. Barley and wheat constitute the most important crops. Wherever water is available for irrigation, the cereals, which are dry-farmed, are supplemented by summer crops of maize, legumes, and vegetables. Horticulture provides precious additional food, and during the spring, when cereal stocks are low, raisins, figs, and nuts are staples. In the semiarid lowlands east of the Rif chain, only cereal farming is possible, and famine may be experienced when rains are meager or arrive too late. The great seasonal migration from this area toward the French farms of eastern Algeria resulted from an imbalance between population and food supply.

Variations in crop combinations and diet are partly conditioned by environmental factors, and hence will be considered in greater detail in chapter ii. A

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3

Palmetto is exploited for its edible bud, and the old women who sell *ghaz* (palm cabbage) are a common sight in the streets of Tetuán and Tangier. During the summer, when cereal stocks are low, many families spend some time digging up palmetto.

Palmetto is exploited also for its fiber, used in the manufacture of *crin végétal*. The collecting is done by women, who deposit bundles of palm blades near scales set out along most of the roads. The fiber is dried in the sun, and then twisted into loose rope and baled for marketing. The finished product serves as a substitute for horsehair in upholstering. In 1955, exporters in the northern zone handled 12,622 tons of fiber.[a] Native craftsmen make hats, mats, and baskets of the same material.

Disturbance of this sort encourages lateral development rather than tall growth from a single stock, but seldom results in destruction of the plant.[b] The resiliency of palmetto is attested by its persistence in cultivated fields. The native farmer has no means of eradicating the deep roots of this plant. Fields are burned and then cleared with hoes and cutting tools. This practice eliminates most shrubs, but it does not destroy palmetto. On the contrary, this plant, as a deep-rooting and heliophilous species, profits from the removal of competitive growth. When fields lie fallow or are abandoned, dwarf palm promptly begins to colonize.[c] In relatively undisturbed formations the palmetto is of secondary importance. It is not conspicuous, for example, in mature stands of cork oak. On sacred sites palmetto is usually found on the edges of the protected growth. Where shrub vegetation is especially dense, as it is along the Mediterranean coast from Wad Lao to Puerto Capaz, dwarf palm grows on sunny south-facing slopes and on the upper edges of stream channels. Pure stands of palmetto seem to indicate floristic and morphologic impoverishment, a reduction of vegetation to its most resistant element.

Pistacia lentiscus (Arabic *dro*) is the second most important element of palmetto scrub. As with dwarf palm, it may be doubted that this plant should be described as a shrub. *Dro* usually appears as a shrub about one meter high, but where soils are deep and plants protected, it may grow three to five meters high. Such trees are rare today. With the exception of a few specimens scattered in the Anjra hills northeast of Tetuán, I have seen tall pistacias only on sacred sites and in a few areas protected by fences. In one form or the other this plant is encountered as an element of maqui in most of the Mediterranean region. It is found almost everywhere in Morocco; only in areas of extreme aridity and in the mountains above 1,500 meters is it absent. *Dro* is mixed with *Zizyphus lotus* in the Nkour

[a] *Marruecos, zona jalifiana: guía económica* (Tetuán: Delegación de Economía, 1955), p. 59.

[b] The ability of the palmetto to survive disturbance is recognized by Theophrastus (*Enquiry into Plants* . . . , II, 6): "The dwarf-palm is a distinct kind, having nothing but its name in common with the other palms. For if its head is removed, it survives, and, if it is cut down, it shoots again from the roots." Louis Emberger concludes, in *Les Arbres du Maroc et comment les reconnaître* (Paris: Larose, 1938), p. 76: "Cette forme naine est déterminée par l'action continuelle des troupeaux, qui broutent les jeunes pousses, et de l'homme qui exploite le Palmier nain pour en faire des cordages et consummer le cœur." M. Rikli, "Marokko," *Vegetationsbilder*, 24, Heft 4/5 (1934), coneurs in this judgment, and adds that the prevalent form of the palmetto "als fuss- bis kniehohes Hartlaubgestrüpp ist sekundär, durch anthro- und zoogene Einwirkung entstanden."

[c] According to Louis Emberger, *Aperçu général sur la végétation du Maroc* (Bern: Hans Huber, 1939), p. 150, "son expansion est le résultat de la destruction des forêts dans lesquelles il était un élément floristique constant." G. Kuhnholtz-Lordat, *La Terre incendiée: essai d'agronomie comparée* (Nimes: Editions de la Maison Carrée, 1939), p. 44, coins a new verb, *endoumer*, the process by which forests degenerate to thickets of *doum*.

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

The Agricultural Calendar

Moroccan agriculture is conducted on the basis of the Julian almanac, and the Latin names for the months have passed with but slight changes into Arabic and Berber. In most of northern Morocco the agricultural cycle involves a combination of dry farming, horticulture, and the cultivation of small irrigated plots. Dry farming as practiced in the Mediterranean region is essentially a matter of farming the same land every other year and of tilling it during the fallow period. In this way as much moisture as possible is kept in the ground for the next year. Since few communities can produce enough grain during the alternate seasons to allow for the fallow years, dry farming requires constant clearing of new land.

In the hilly areas of Jbala and Ghmara the beginning of the agricultural year is marked by fires set to clear new fields, and the haze of smoke lingers until the arrival of the first rains. By the end of the summer drought, animals are weakened by the scarcity of feed; and wherever the soil is clayey the drought-hardened surface is difficult to plow. So the farmer waits for the first rains for plowing and the second for seeding. After the soil has been turned, cereals, usually barley or hard wheat, are broadcast. Then the soil is again worked with the plow and, since Moroccans do not use the harrow, clods are broken with clubs or hoes.

In the western half of the northern zone, plowing usually begins toward the end of September, and sowing is completed by the beginning of November. In the eastern sector the first heavy rains may not come until March or April. In this event, no further thought is given to barley or wheat, and a desperate effort is made to prepare the soil for a summer crop of sorghum. When cereals are sown, the feverish activity of autumn gives way to a period of virtual hibernation. Only the women keep busy, for there is always need for fodder and fuel.

In frost-free areas, February marks the beginning of the work of planting, pruning, grafting, and fertilizing the fruit and nut trees. This task continues through March and April. In the lower areas of the Rif the most common trees are the fig, pomegranate, almond, and olive. In the highlands walnuts are most important. Trees are cared for assiduously, for dried figs, raisins, and nuts constitute the principal food reserves after the cereals have been consumed. Since they do not have to be watered, figs and vines usually occupy the higher and steeper slopes. New olive trees are usually obtained by grafting on the oleaster. The olives are often left so long in heaps on the ground that they begin to ferment, and the oil is very rancid when the fruit is eventually pressed.

The arduous task of rebuilding terraces, dams, and ditches begins in March. This work is not yet finished when it is time to begin the harvest of the cereals. The shortage of manpower at this time is offset by the women, who reap the grain with sickles and carry it to threshing floors. There it remains until the men have completed the planting of the summer crops. Then all effort is devoted to threshing and winnowing. This work begins in July and in bountiful years it may still be in progress when the first rains fall. Threshing takes place on communal floors, which may or may not be paved. These are always in an exposed position, and when the mixture of grain and straw is thrown in the air, it is separated

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Senhaja MX4

by the wind. Cattle, mules, or donkeys tread the crop and separate the grain from the chaff. As the animals are driven in a circle, the men work with winnowing forks (pl. 5, *a*). After most of the chaff has been removed, the women take over and finish the winnowing by hand. The men then set to work piling up the straw to be used as fodder during the winter months. In Garet and Gal'aya, the usual form of strawstacks is oblong; in the Rif they have a circular form. Strawstacks are sometimes covered with a thin veneer of mud; sometimes they are held in shape by stones tied to ropes. In the wetter, western provinces straw must be stored inside.

In early September, maize is harvested and the almonds and figs are collected. The remaining trees, including the olive, do not bear fruit until November or December. Grape picking, usually in mid-September, marks the end of the agricultural year. After this has been done, the cereals reaped and threshed, and the strawstacks prepared, there is time for rejoicing. September is the usual month for weddings and also for festivals and pilgrimages. But it is already time to think of the new cereal crop, and smoke from fresh clearings marks the beginning of a new year.

The cycle just described is most applicable to Ghmara, Sanhaja as-Srair, and the western margins of the Rif. On the Atlantic littoral there is little danger of frost, and vegetables may be grown at any time of the year. The calendar of events in the drier and warmer parts of the northern zone is usually two or three weeks ahead of the cycle in the highlands. When autumn rains fall over the zone, cereals are ready for harvest in the warmer eastern sector in May, but as often as not the advantage of higher temperatures is offset by meager or tardy precipitation. In 1957 the first heavy rains did not reach Gal'aya until April.

The pattern of land use in the highlands reflects centuries of trial and error. The problem here is that it is virtually impossible to grow more than one crop on the same plot of land. Maize and hemp must be planted before the cereals are ripe, and there is also a conflict of time between the harvest of cereals and the planting of vegetables. Hence a division is made between land planted to summer and to winter crops. Since the former are dry-farmed and the latter irrigated, this division coincides with a break in slope. When there is abundant water for irrigation, cereals, figs, and vines are pushed to higher and more precipitous slopes. The Aith Arbi, who own valuable terraced land on the north slope of Adrar Tidighin (pl. 6), arranged a generation ago to purchase additional land at a lower elevation so that it would no longer be necessary to devote precious irrigable land to cereals. Similar divisions have been effected by many highland communities. The disadvantages of specialization are offset also by barter at the weekly markets. In Ktama, tribesmen from the deep valley of Abd al-Ghaya grow an abundance of grapes, figs, oranges, and vegetables, which can be exchanged for grain produced on higher and drier land.

Most highland communities are not so fortunate, and an attempt is made to allocate land for each season. Cultivation is usually spread over three distinct zones, which are worked at different times of the year. First, and lowest in a valley, is the zone of terraces reserved for the irrigated crops. The next zone, at a slightly higher elevation, is planted to cereals, figs, and vines. A still higher

[See pp. 129-130--Analyst]

7: Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3
Jebala MX2

of Garet. In the Atlantic coastal zone most of the surface is cultivated, and little vegetation is left to serve as browse. In the eastern plains goats are replaced by sheep, which begin to outnumber them in the lower parts of the Rif. In the Middle Atlas the raising of sheep is associated with transhumance. This mode of pastoral life is still followed to some extent by the Ulad Stut, Aith Bu Yihyi, and Ibdharsen, who spend the winter months near their cereal fields and the summer months in higher country with their sheep. The routes of migration run from the alluvial lowlands into nearby hills, especially the Kar-Kar range. In recent years the development of new irrigation projects has discouraged pastoral life, and the migration is now limited to a few of the young men and boys.

In the western provinces the main draft animals are cows or oxen. In the highlands and in the eastern lowlands the beasts of burden are donkeys and mules, which are used also for threshing and turning olive grinders. Mules are highly prized, for they can carry a heavier load than donkeys and are more agile and hardy than horses. Since there are few horses in the northern zone, most mules are imported from elsewhere in Morocco or from Spain. Moroccan donkeys are a small but hardy race, able to withstand long journeys with heavy loads. Horses have little value except as symbols of wealth and prestige, and are seldom used in the mountains. At the time of the Spanish conquest there were no horses at all in Aith Bu Nsar, Aith Seddath, and Aith Khannus.[a] Camels are restricted to the plains of Garet, where about 2,000 of them are used as milk, pack, and draft animals. Except for an occasional playful experiment, camels are not ridden.

The pack saddle for donkeys and mules is a heavy object made of cloth stuffed with straw. Panniers of twilled basketry, consisting of a double container connected by a strip of basketry, serve nearly all transport needs. Riders perch on top of the load and let their legs dangle to one side. There is little riding in the mountains, for a healthy man can make better time on foot.

Women are the most important burden bearers. Lines of women or girls bent under heavy loads are a common sight everywhere in Morocco. In Jbala they may be seen on any road carrying huge loads of wood and charcoal (pl. 8, *b*).

The domestic animals in northern Morocco include ferrets used in hunting, dogs, cats, and chickens. The dogs are of two types, one a small cur and the other a larger sheep dog. Chickens are the exclusive property of women, who sell them and their eggs independently of their husbands. Bees are kept in the mountains, but the average tribesman knows nothing of apiculture, and prefers to assign the task to paid specialists.

Irrigation and Water Rights

In Moroccan agricultural terminology the most important distinction is that between *bilad bour*, the land of dry farming, and *bilad saqiyah*, the land of irrigation. By far the greatest amount of irrigated land is watered by diversion of surface runoff (pl. 5, *b*). Small dams (*mechra*) are used to divert water into ditches (*saqiyah*), which lead to the irrigable land. The ditches often follow tortuous contours, and may extend for several kilometers. The larger streams are flanked by several channels, sometimes five or six, each bringing water from a

[a] Coon, "Tribes of the Rif," p. 39, cited in note 5.

A, [See p. 132--Analyst] B, [See p. 129--Analyst]

7:. Mikesell K-4,5 (1955-1957) 1961 MX3 Rif MX3

The answer to this dilemma, if it may be called an answer, is emigration. In the decade preceding the current disorder, more than 30,000 Rifians went to Algeria each year to work on French farms. The main drift took place during the slack winter season, but smaller groups migrated at other times of the year. Few Morocans thought of emigration as a permanent change. They were hired by members of their own tribe appointed to serve as contractors, and messengers visited them regularly to collect money for the families left at home. Each tribe had its special place of employment. The Aith Warishik went to Sidi bel Abbes, the Aith Tuzin to Tlemcen, the Thimsaman to Blida and Ain Temouchent, and the Gal'ayan tribes to Oran.[112] The largest number of emigrants were recruited from the Aith Said, and it is not a coincidence that the territory of this tribe includes spectacular badlands. From the standpoint of the French farmer this movement was a blessing, for the Moroccans worked harder than the Algerians and were satisfied with less pay. The tribesmen of the western Rif did not join in the seasonal movement to Algeria, but many of them migrated to Tetuán and Tangier.[113]

These movements are manifestations of a general trend. The oasis dwellers of the Mzab have long practiced emigration as a solution to their problem of overpopulation. The Mozabite is a farmer in his youth and again in old age; during the middle years he may be a bus driver, a shopkeeper, or a mechanic.[114] The same tradition is found among the craftsmen of Taghzut and some of the Shluh tribesmen of the Anti Atlas. Emigration is not a new development, but in recent years it has been practiced on an unprecedented scale.[115]

[112] F. Benedicto Pérez, "Trabajadores rifeños en Argelia," *Conferencias desarrolladas en la Academia de Interventores durante el curso de 1948* (Tetuán: Imprenta del Majzen, 1949), pp. 5–17.

[113] D. M. Hart, "Notes on the Rifian Community of Tangier," *Middle East Jour.*, 11 (1957), 153–162.

[114] In the Mzab the tradition of emigration for men is combined with a tradition that women must not leave the oasis. See Karl Suter, "Die Ortsgebundenheit der Frau bei den Mozabiten," *Geographica Helvetica*, 12 (1957), 102–114.

[115] On emigration see also Günter Glauert, "Veränderungen in den Bevölkerungsstruktur Nordafrikas in den letzen Jahrzehnten," *Die Erde*, 88 (1957), 298–319; René Raynal, "Déplacements récents et actuels des populations du bassin de la Moulouya (Maroc oriental)," *Comptes Rendus du Congrès International de Géographie, Lisbonne, 1949* (Lisbon, 1952), IV, 67–80; and J. C. Petit and Castet Barou, "Contribution à l'étude des mouvements de la population marocaine musulmane et de l'exode rural," *Bull. Economique et Social du Maroc*, 68 (1955), 423–459.

1sCoon E-5 (no date) 1951 M1 Middle East
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[Village of Ulad 'Abd al-Nour]

had died by the rifle, and many of their brothers as well. Some provision must be made for young widows and their helpless children. To the human population of fifty-seven was added an animal roster of one hundred and twenty-five head: 10 cows, 1 calf, 15 sheep, 80 goats, 1 donkey, 2 mules, and 16 dogs. Six of the men owned the goats, and one the sheep; three men had none. Each man, however, owned a cow, for all needed milk.

There were a total of 923 food-bearing trees—more than 16 to a person, or 92 to a family. These were divided as follows: almonds, 525; figs, 272; olives, 71; pomegranates, 33; apricots, 16; oranges, lemons, and walnuts, 2 of each. Every man owned at least 4 almond, 15 fig, and 3 olive trees. Dried almonds and figs are absolutely necessary to sustain life in late winter once the grain has been eaten, while olive oil is the essential fat. The other kinds of trees produce useful fruits, but the Riffians can get along without them.

In these high valleys arboriculture is the main business of the people, and they prune, water, graft, and fertilize their trees with extreme care. Compared to this activity the Riffian spends but little time in his fields; he owns enough tillage for only about four weeks' plowing time a year, with a range of from twenty to forty-five days among the ten men. Those who have little are hired to work for those who have more, on the ancient system of granting a fifth to the plowman. Work on the vegetable gardens rates a fourth, while he who cares for another man's trees receives a third of the fruit, aside from windfalls which are for women, children, and the poor.

Unfruitful trees have long ago been felled to make way for the silver-leaved olives and the lofty walnuts. Up high on the ridges to either side one can still cut cedar and even a few pine. Below the man-made tree line is a zone of brushy goat pasture, and below this, but still steep, the vineyards. Here the families gather in September to pick the grapes, which they dry into raisins to be eaten with the figs and almonds. Up the valley a way there are two public installations, a small turbine water mill of familiar appearance, which belongs to the grandsons of its builder, and an olive press, which serves several villages. This olive press is actually near the center of another village, inhabited by holy people who never fight. Their holiest member regulates the protocol of olive pressing, aside from serving as imām to lead the Friday prayer, in which the grown men of all the villages of that part of the valley participate.